

ABSTRACT OF THE DISCLOSURE

5 A bi-directional stepping motor in which a rotor is rotatable in steps of 180 degrees
each, the stepping motor comprising a rotor comprising a permanent magnet and rotatably
mounted about an axis and providing a permanent magnetic field; a first electrical coil and
a second electrical coil; a stator on which the first electrical coil is mounted; and a control
circuit, coupled to the first and second electrical coils, for applying electrical pulses
independently to each coil and for controlling the polarity thereof, the coils producing
10 magnetic fields in response to the pulses and wherein the rotor is rotatable in response to
the magnetic fields; wherein each step of 180 degrees is effectuated by providing to the
first coil, a first pulse of a first polarity and a second pulse of a second polarity; and to said
second coil, a pulse of the second polarity simultaneously with the providing of the second
pulse to the first coil; wherein during the providing of the first pulse to the first coil, there
15 is no pulse being provided to the second coil.